Delivering pulmonary rehabilitation via telehealth during COVID-19

Virtual PuRe

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Delivering pulmonary rehabilitation via telehealth during COVID-19

This document has been developed to assist pulmonary rehabilitation (PR) programs to continue to provide patient care during the COVID-19 pandemic. The document provides organisational models of PR and options for the delivery of home-based PR supported by telehealth (i.e. telephone or videoconferencing).

Most mainstream pulmonary rehabilitation services have traditionally delivered centre-based, face-to-face interventions. The social distancing requirements to prevent community transmission of COVID-19 has meant that these face-to-face pulmonary rehabilitation services have been temporarily suspended across NSW.

Early in 2020, the NSW Agency for Clinical Innovation's Respiratory Network Pulmonary Rehabilitation Clinical Expert Reference Group (PuReCERG) began to develop this guidance document to support face-to-face pulmonary rehabilitation to transition to virtual models of pulmonary rehabilitation, supporting this essential aspect of managing chronic respiratory conditions to continue during the COVID-19 pandemic.

A rapid review of the available evidence, both published and grey literature around the virtual delivery of pulmonary rehabilitation, was undertaken by searching PubMed and Google on 23 March 2020 using the following search terms:

- Pulmonary rehabilitation
- Virtual pulmonary rehabilitation
- Telehealth
- Telerehabilitation
- Respiratory rehabilitation.

Criteria for assessing the resulting evidence included, credibility of authors, inclusion of papers in high impact journals, availability of any systematic reviews and validation of tools within the Australian Pulmonary Rehabilitation Guidelines and Pulmonary Rehabilitation Toolkit.

NSW Telehealth guidelines were also used to inform the translation of research into practice within this guide. Synthesis was undertaken collaboratively by the PuReCERG, who used their academic and clinical expertise to achieve clinical consensus for literature and tools that would be used to support the development of this guide. The tools selected for use within this guide are validated, well socialised and currently widely used in standard pulmonary rehabilitation practice across NSW.

Introduction

During the COVID-19 pandemic most PR programs in NSW are no longer providing face-to-face assessments and interventions. PR improves the quality of life for people with chronic lung disease and, importantly, helps to keep people out of hospital.[1-3]

Keeping people with chronic lung disease out of hospital over the period of the pandemic is vital to reduce the burden on the health system at a time when resources are stretched. In addition, any admissions to hospital would potentially increase the risk of the patients being exposed to COVID-19.

This document provides suggestions about how to manage patients who are in the following situations during the COVID-19 pandemic:

1) Patients currently enrolled in a PR program who have already completed an initial face-to-face assessment.

2) Patients on the current PR waiting list and new referrals to PR during the pandemic.

3) Patients admitted to hospital for an exacerbation who would normally be suitable to participate in PR following hospital discharge.

Telehealth is the delivery of healthcare at a distance using information communications technology, and in this document refers to telephone or real-time video connection. Telehealth is used to connect clinicians to patients, caregivers or any person(s) responsible for providing care to the patient, for the purposes of assessment, intervention, consultation, education and/or supervision.

Guidance on options for the safe provision of PR programs via telehealth modalities in each of the above situations is provided. The information in each section below is based on current available evidence. We acknowledge that the evidence for telehealth PR is not as strong as for centre-based PR. However, at this time it is important to support our patients with the best PR programs possible in the circumstances. We are in unchartered territory with the inability to perform face-to-face patient assessments. This will be challenging and will require patient cooperation, flexibility, and experienced clinicians with confidence to learn new telehealth skills.

This document recommends transition of current PR programs to a telehealth model, making use of existing resources available in current programs. The choices that PR programs will make to manage their current and future patients over this time will depend on the availability of local infrastructure, resources, health professional skills and time commitments.

NSW Health and the NSW Agency for Clinical Innovation are providing support for clinicians to aid the rapid transition to telehealth models of care. In addition, within each local health district, there is a telehealth manager or lead who can be contacted for help and advice.

Information on support services is available from:
https://www.aci.health.nsw.gov.au/__data/assets/pdf_file/0006/509478/Telehealth-contacts-in-NSW.pdf

Information on how to set up PR telerehabilitation sessions is provided in Appendix 1.

Please note: This document may not be applicable to patients requiring continuous monitoring during exercise tests or close supervision for safety during exercise training, such as those with heart failure or pulmonary arterial hypertension, unless these patients were already known to the local PR programs and have been assessed face-to-face.

Managing change to a telehealth model of pulmonary rehabilitation

Patients who had already commenced PR should be given first priority of access to the telehealth model, followed by patients on the waiting list and those newly referred to the program.

1. Patients currently enrolled in PR who have already completed an initial face-to-face assessment

Within this potentially large group of patients, PR programs may be helpful in identifying patients who are a higher priority for continuing with PR via telehealth. Priority categories from highest priority (category 1) to lowest priority (category 3) and recommended time to commence PR via telehealth are provided in Table 1.

Table 1. Categories for prioritising patient access to PR via telehealth and recommended time to commence

Priority category and examples of patient cohorts	Commencement period
Category 1 – highest priority ○ Pre/post-surgical procedures, e.g. lung transplant, lobectomies/pneumonectomies ○ Recently acutely unwell/recent hospitalisation ○ Undergoing concurrent treatment, e.g. radiotherapy or chemotherapy	Should commence PR via telehealth as soon as possible
Category 2 – medium priority ○ Stable lung disease but require motivation and support to exercise	Should commence PR via telehealth within a reasonable time period
Category 3 – lowest priority ○ Stable lung disease and safe and able to exercise independently	Can wait for PR until the service capacity can be increased or when the service resumes normal operations

2. Patients currently on the waiting list and/or newly referred to PR during the cessation of centre-based programs

The following steps may help in providing PR programs for wait-listed patients and new referrals:

1. Screen patients via telephone to determine their interest in participating in PR via telehealth and their motivation to exercise and level of support required.

2. Determine priority category of screened patients (see Table 1) and offer a PR program via telehealth in line with what local resources can manage.

3. Consider asking patients if they would like to be connected to a text messaging information service, such as the Texting for Wellness, Lung Support.

3. Patients admitted to hospital with an exacerbation of their lung disease during the COVID-19 pandemic and are suitable to participate in PR following hospital discharge

The inpatient setting may provide the opportunity to commence gentle exercise and to learn about the importance of PR and physical activity. Given that face-to-face PR programs are currently suspended and staff from these programs may have availability to attend the inpatient setting (if appropriate), this may offer the opportunity for PR team members to engage patients in some form of rehabilitation prior to discharge. This may be in the form of:

- Participation in ward-based supervised exercise.
- Referral to the patient's local PR program.
- Commencement of home-based PR with telehealth support or telerehabilitation.
    - It will be important that a good clinical history and exercise level at discharge is provided to the PR clinician.
    - Prior to discharge, if possible, complete the following assessments:
        - 5 sit-to-stand test (5STS) (Appendix 2)
        - 1 minute sit-to-stand test (1minSTS) (Appendix 3)
        - Questionnaires:
            - Quality of life, e.g. St George's Respiratory Questionnaire (SGRQ) or Chronic Respiratory Disease Questionnaire (CRQ)
            - Disease impact, e.g. COPD Assessment Test (CAT)
            - Psychological status, e.g. Hospital Anxiety and Depression Scale (HADS).
    - Design an exercise and education program +/- give exercise booklet/diary.
    - Plan for follow-up telephone calls or videoconference contact.
    - Consider asking patients if they would like to be connected to a text messaging information session.

Components of PR via telehealth

The components of PR via telehealth are similar to centre-based PR, with adjustments made to account for reduced patient contact. The components are:

- Patient assessment (via telehealth)
- Exercise program:
    - An individually prescribed exercise program for the patient to complete at home either unsupervised or supervised via real time videoconferencing.
    - Provision of a home exercise diary with information regarding when it is not safe to exercise - the Lung Foundation Australia *Better Living with Exercise* resource.
    - Weekly telehealth contact with progression of exercise prescription based on symptoms, health coaching, goal setting and symptom assessment (Appendix 4).
- Patient education:
    - Provision of disease-specific education and self-management information.
- Patient re-assessment (via telehealth).

Details of each component are provided below.

Patient Assessment

Most components of a standard PR assessment can be conducted via telehealth (Table 2), either via telephone or videoconference. A telehealth assessment may take longer than a traditional face-to-face assessment and the patient should be advised of the time required. To improve time efficiency, a pack of preparatory resources can be sent to the patient (by mail or email) prior to the initial assessment. Resources may include questionnaires already used in your program, as well as general information about lung disease and PR. Clinicians must adapt communication styles to suit interacting with patients via telehealth and being a 'guest' in the patient's home.

Suggested components of a PR assessment via telehealth are listed in Table 2, and also available in the Pulmonary Rehabilitation Toolkit.

Table 2: Patient assessment

Assessment	Telephone	Videoconference
General medical history Respiratory history - Diagnosis, previous PFTs if available, previous disease-related hospitalisations, smoking history, medications and delivery devices, vaccinations.[10] (Note: spirometry and other PFTs should not be performed during COVID-19.) Social history	✓	✓
Subjective symptoms/impairments - Dyspnoea, cough, wheeze, fatigue, exercise tolerance, activities of daily living limitations, chest pain, current exercise routine COVID-19 specific symptoms - **NEW** fever, runny nose, sore throat, cough, SOB	✓	✓
Safety to exercise - Ascertain from medical history	✓	✓
Objective measures (self-reported) - Height and weight - BP, HR, SpO$_2$ (if patient has devices at home) Symptoms at rest - Breathlessness (using modified Borg 0-10 dyspnoea scale) Note: Physical activity monitors (e.g. Fitbit, Garmin) and smartphone apps may provide some information but their clinical grade is unknown, therefore use these to look for patterns rather than exact recordings.	✓	✓
Objective physical measures **(these measures should only be undertaken by a clinician who is experienced and confident to supervise exercise tests remotely)**. - Lower limb strength: 5STS test - Lower limb endurance: 1minSTS test	✗	✓
Assessment of daily physical activity - Physical activity via Active Australia Questionnaire (Appendix 5)	✓	✓
Subjective measures - Breathlessness (e.g. mMRC) - Quality of life (e.g. SGRQ or CRQ) - Disease impact (e.g. CAT) - Psychological status (e.g. HADS) - Disease knowledge (e.g. LINQ, Bristol Knowledge Questionnaire)	✓	✓
Virtual tour of area to be used for exercise if videoconferencing is available (verbal consent required), or discuss home exercise environment and suitable equipment - walking track options - chairs and select most appropriate - step/s (if available) - consider safety factors (e.g. trip hazards such as rugs, clutter, pets)	✗	✓
Assess goals and motivation to exercise - use health coaching principles (http://www.healthchange.com)	✓	✓

Abbreviations: BP, blood pressure; CAT, COPD Assessment Test; CRQ, Chronic Respiratory Disease Questionnaire; HADS, Hospital Anxiety and Depression Scale; HR, heart rate; LINQ, Lung Information Needs Questionnaire; mMRC, Modified Medical Research Council Dyspnoea Scale; SGRQ, St George's Respiratory Questionnaire; SOB, shortness of breath; SpO2, oxygen saturation via pulse oximetry; STS, sit-to-stand; PFTs, pulmonary function test.

Exercise Component of PR via telehealth

1. Unsupervised home-based exercise with telehealth support (telephone or videoconference)

Home-based PR programs have been shown to be an effective method of delivering PR.[4,5] However, most home-based programs that have been evaluated have included a face-to-face assessment and re-assessment, plus a home visit or face-to-face supervised exercise training. Such face-to-face assessments and supervised training during the COVID-19 pandemic will not be possible. Therefore, adaptations to assessment, exercise prescription and progression of exercise, will be necessary.

Inclusion criteria

- Access to a phone or videoconference platform with own device and reliable internet connection.
- Ability to operate phone or videoconferencing platform independently or with family member or carer assistance.
- Adequate hearing to participate in telehealth conversations.
- Adequate command of the English language to follow instructions or availability of interpreter services.
- Able to mobilise independently and safely, with or without a walking aid.
- Able to get on and off any home exercise equipment independently and safely.
- Willingness to participate in a home-based PR exercise training program.
- Able to provide informed consent.

Exclusion criteria

- Cognitive impairment (e.g. previous Mini Mental State Exam score <24).
- Unstable cardiac or neurological disease.
- Unable to participate due to any musculoskeletal conditions despite tailored exercises.
- Poor balance with the risk of falling without direct face-to-face supervision.
- If the patient lives alone and is not confident to participate in the program on his/her own and does not have the financial capacity or residential data plan to support participation.

Access to email is beneficial to enable resources to be easily sent to patients. However, this is not a necessary component as resources can be mailed or discussed over the telephone.

Suggested home-based exercise program

- The exercise prescription should include mode, intensity, duration, type, frequency, length and progression (Table 3).

Table 3. Components of exercise prescription for PR via telehealth

Components	Prescription
Mode	Lower limb endurance exercise (e.g. walking) Upper limb endurance exercise (e.g. light hand weights) Lower limb strength training (e.g. sit-to-stand, squats) Upper limb strength training (e.g. resistance bands)
Intensity	3-4 ('moderate' to 'somewhat severe') on the modified Borg 0-10 dyspnoea or RPE scale
Duration	This should be set for each mode of exercise: - Lower limb endurance: at least 30 mins (could start with 10-15 mins) - Upper limb endurance: 10 mins - Lower limb strength: 10 mins - Upper limb strength: 10 mins
Type	Continuous, interval or intermittent
Frequency	At least twice a week to replace the centre-based supervised sessions, plus home exercise program on at least two other days of week
Length of program	8 weeks
Progression	Intensity should be progressed to maintain intensity at a dyspnoea or RPE score of 3-4 Duration should be increased based on the patient's response to training

- The exercise program will involve minimal equipment but can be altered if the patient has access to exercise machines at home (e.g. lower limb cycle ergometer, treadmill, cross trainer, stepper, arm cycle/leg pedals).

- The modified Borg 0-10 dyspnoea and RPE scales should be sent to the patient either electronically or by mail in advance. If remote monitoring equipment for HR and SpO_2 is available, then this could be used for additional monitoring. However, the clinical grade of these devices for home use is unknown, therefore, use these to look for patterns rather than exact recordings.

Remember some activity is better than none, so although you may not be able to prescribe a specific intensity of training for a patient from an exercise test, such as the 6 minute walk test, encouragement of exercise based on increasing duration of activity and symptoms (3-4 'moderate' to 'somewhat severe' on the modified Borg 0-10 dyspnoea or RPE scale) is still valuable.

Patients' responses to the Active Australia Questionnaire can also be used to guide advice regarding increasing daily physical activity levels. Some useful resources regarding ways to encourage increased physical activity are available in Commonwealth Government information resources.

2. **Supervised home-based exercise via real-time videoconferencing (telerehabilitation)**

Supervised home-based telerehabilitation via real-time videoconferencing technology has been shown to be effective in increasing endurance exercise capacity and self-efficacy in people with COPD.[7] If patients are interested in using videoconferencing technology, then real-time videoconferencing could be used to complete the assessment and re-assessment, as well as to supervise and progress the exercise training.

Telerehabilitation can be provided to an individual or a group. Telerehabilitation videoconferencing platforms can usually accommodate 4-6 patients per group. Experienced clinical and research clinicians recommend group sizes no larger than 6 for safety and ease of monitoring and communication.[6,7]

Home-based telerehabilitation via real-time videoconferencing consists of individually prescribed home-based supervised exercise twice a week, with advice to complete unsupervised exercise on at least two other days (Table 3).

Additional inclusion criteria to undertake supervised home-based exercise via real time videoconferencing (telerehabilitation)

- Access to a technological device with real-time video camera function (smartphone, tablet, laptop, desktop computer and some smart televisions), with own reliable internet connection. This will depend on the participant's capacity and residential internet data plan.
- Ability to operate technological device independently or with family member or carer assistance.
- Willingness to participate in supervised exercise training using a technological device.
- Willingness to have designated exercise area at home openly displayed to clinician and other patients during group videoconferencing sessions.
- Access to a home telephone or mobile phone during the telerehabilitation session for contact in case of an emergency or loss of videoconferencing contact.

Additional exclusion criteria to undertake supervised home-based exercise via real time videoconferencing (telerehabilitation)

- Hearing impairment that could inhibit listening through the technological device speakers or headphones/earphones whilst completing supervised exercise.
- Eyesight impairment that could inhibit viewing a technological device screen whilst completing supervised exercise.
- Inability to operate the technological device following instructions.

Exercise program and supervision using real-time videoconferencing

The program is similar to unsupervised home-based exercise with telehealth support (Table 3) but the technological device (webcam or camera) should be set up on a stable position such that the clinician can view the patient exercising in real time. For example, ground-based walking in the home should be on a track that takes the person to and from the camera set-up.

If a pulse oximeter is available at home, patients will be able to report the SpO_2 and HR to the clinician, otherwise the clinician can use symptoms (from modified Borg 0-10 dyspnoea or RPE scale) to guide exercise intensity.

Please refer to the Appendix 1 for information on how to set up a real-time videoconferencing program.

Patient Education

Education plays an important part in helping patients acquire the knowledge and skills required to self-manage their chronic lung condition. Education should address the patient's main issues, which will vary from patient to patient.

- Identify the patient's main issues during the initial assessment. When asking about main health issues, use the OARS principle of motivational interviewing.
    - O = open-ended questions
    - A = affirmation
    - R = reflection
    - S = summary
- Sample questions are:
    - '*What would you say is your main health issue – what worries you the most?*' You may need to prompt e.g. *'You have mentioned a few health issues during our assessment such as smoking, shortness of breath, hip pain. What would you like to work on first?'*
- Once the main issues are identified, the education can then be tailored to address these issues. Some patients may not need all the education modules as they may have already accessed information online.
- This is a good time to help the patient set SMART goals (Specific, Measurable, Achievable, Realistic, Timed) that they would like to achieve during the PR program.

It is recommended that education should continue to be provided to patients during home-based PR delivered via telehealth, using existing program resources or the Lung Foundation Australia *Better Living with COPD* booklet. Education topics should include:

1. The importance of exercise and physical activity

    Note: Some patients may have access to a remote physical activity monitoring device e.g. FitBit, Garmin watch, which could be used to encourage and/or monitor physical activity e.g. steps.

2. Symptom management and monitoring

3. Inhaler medication education

    - Lung Foundation Australia education videos
    - Lung Foundation Australia fact sheets

    Please note: During the COVID-19 pandemic, discourage the use of nebulisers unless absolutely necessary. Encourage medical review and the use of an MDI with a spacer. If a nebuliser will continue to be used, educate the patient and family/carers by following the advice of the NSW Agency for Clinical Innovation.

4. Action plans

5. Knowledge of lung disease

6. Smoking cessation

Other possible topics:

7. Nutrition

8. Psychological support

9. Managing cough and sputum

Not all of these topics will be applicable to all patients. During the initial assessment, ascertain which topics will be relevant for each patient.

Patient Re-Assessment

Re-assessment of outcome measures is important for determining effectiveness of any intervention. Following home-based PR delivered via telehealth, the clinician should make a separate appointment time to re-assess the patient on an individual basis.

There will be two groups of patients requiring re-assessment:
1. Existing/currently enrolled patients who completed an initial face-to-face assessment.

2. New patients who completed an assessment via telehealth (via telephone or videoconference).

For both groups of patients, re-assessment should include repeating questionnaires and objective outcomes measures, as well as reviewing goals and discussion regarding ongoing self-management and maintenance exercise options. To improve time efficiency, a pack of preparatory resources (questionnaires, educational information regarding maintenance of exercise) can be sent to the patient (by mail or email) prior to the re-assessment.

Table 4: Patient re-assessment

Re-assessment component	Telephone	Videoconference
Re-assessment of objective measures **(these measures should only be undertaken by a clinician who is experienced and confident to supervise exercise tests remotely)** - Lower limb strength (5 STS test) - Lower limb endurance (1 minute STS)	✗	✓
Re-assessment of daily physical activity - Physical activity via Active Australia Questionnaire	✓	✓
Repeat subjective measures - Breathlessness (e.g. mMRC) - Quality of life (e.g. SGRQ or CRQ) - Disease impact (e.g. CAT) - Psychological status (e.g. HADS) - Disease knowledge (e.g. LINQ, Bristol Knowledge Questionnaire)	✓	✓
Re-assess goals and motivation to keep exercising	✓	✓

Abbreviations: CAT, COPD Assessment Test; CRQ, Chronic Respiratory Disease Questionnaire; HADS, Hospital Anxiety and Depression Scale; LINQ, Lung Information Needs Questionnaire; mMRC, Modified Medical Research Council Dyspnoea Scale; SGRQ, St George's Respiratory Questionnaire; STS, sit-to-stand.

Useful Resources for Patients Enrolled into PR via Telehealth or on Waiting Lists for PR

In order to promote skills in self-management there are many useful resources that can be provided to patients who are either waiting to access PR, undertaking PR via telehealth, or who do not want to engage in PR via telehealth.

1. **Text messaging service to provide support and connection during times of social isolation**

Increasing numbers of people who attend PR programs own a mobile phone.[8] One component of ongoing support that could be offered to patients living with chronic respiratory disease is regular text messaging of health messages and support information.

Text messaging may provide an opportunity to encourage, motivate, educate, and support self-management of people with chronic respiratory disease, in the absence of face-to-face group exercise and education sessions, while being a no-cost service. All patients who choose to register will receive the 6-month text message support free of charge.

By opting into the text messaging service, patients will receive four text messages per week plus one message per fortnight related to COVID-19 support and advice (based on Australian Government advice). Patients can respond to the text messages if they wish, and a team of external clinical support staff will monitor and respond or refer to a PR clinician, if necessary. The messaging program will be administered through a secure online platform.[9]

There are three ways to register for this service:

- Patients can send a text message with the word 'Lung' to 0437 045 826 to trigger the online registration

- Patients can be provided with the link below, or clinicians can complete the registration on their behalf: https://redcap.sydney.edu.au/surveys/?s=DAE38E8WYT

- Patients can get a link to the registration via their mobile phone camera using the QR code:

Information required for registration: name, mobile phone number, date of birth, gender, primary health condition, smoking status, postcode. After providing this information, the patient (or representative) can click on the 'activate program' link to activate the program.

2. COPD online patient education: 'COPE online'

The COPE program is an online program developed by Lung Foundation Australia to enable patients to undertake the education program associated with PR. It is a simple online, interactive and informative modular program that provides information for patients on:

- understanding your lungs

- managing your medicine and symptoms

- how you can better help yourself

- physical activity and exercise

- living with a lung disease.

Patients can be referred to https://cope.lungfoundation.com.au/ to register and gain free access to the materials.

3. Better living with COPD manual: A patient guide

This booklet was developed by Lung Foundation Australia to support people with COPD so that they understand their lung disease and the steps they can take to better manage it. Families and carers may also find this information useful. This booklet can be downloaded from the Lung Foundation Australia website as a pdf document.

4. Exercise videos

Exercise videos that are suitable for people not attending PR:

- The Lung Foundation has general instructional exercise videos that provide guidance to patients.
- The British Thoracic Society also have instructional exercise videos for patients with lung disease.

Exercise videos that may be suitable for people attending PR:

- Move it or Lose it Australia
- Go4Life

5. Brochures on physical activity advice

The Australian Federal Government have developed physical activity brochures with advice about physical activity and sedentary behaviour including:

- A guideline for adults (18-64 years) - More than half of all Australian adults are not active enough.
- Information to help older Australians achieve sufficient physical activity for good health - Choose Health: Be Active: A physical activity guide for older Australians.

Appendix

Appendix 1: Setting up Telehealth

NSW Health Telehealth website:
https://www.aci.health.nsw.gov.au/make-it-happen/telehealth

NSW Health - *Telehealth in practice guide:*
https://www.aci.health.nsw.gov.au/__data/assets/pdf_file/0006/573270/ACI_Telehealth-in-practice-guide-0261.pdf

NSW Health - *Telehealth: Getting Started Guide*:
https://www.aci.health.nsw.gov.au/__data/assets/pdf_file/0005/573269/ACI_Telehealth-Getting-started-guide-0387.pdf

NSW Health - *Telehealth: Quick start guide summary:*
https://www.aci.health.nsw.gov.au/__data/assets/pdf_file/0007/573271/ACI_Telehealth-quick-start-guide-summary-0392.pdf

NSW Health – *Telehealth: Readiness assessment:*
https://www.aci.health.nsw.gov.au/__data/assets/pdf_file/0007/573370/ACI_Telehealth-readiness-assessment-0396.pdf

NSW Health - *Email Template - Telehealth clinic appointment:*
https://www.aci.health.nsw.gov.au/make-it-happen/telehealth/local-contacts-and-training-for-clinicians

NSW Health - *Attending a consultation with your patient using telehealth:*
https://www.aci.health.nsw.gov.au/__data/assets/pdf_file/0011/573266/ACI_Attending-a-consultation-using-telehealth-clinicians-0224b.pdf

NSW Health - *Clinician script to introduce patients to a telehealth appointment:*
https://www.aci.health.nsw.gov.au/make-it-happen/telehealth/local-contacts-and-training-for-clinicians

NSW Health - *Patient Information - Attending your appointment using telehealth*:
https://www.aci.health.nsw.gov.au/__data/assets/pdf_file/0004/573268/ACI_Having-a-telehealth-appointment-patient-fact-sheet-393.pdf

NSW Health - *Patient Information - Preparing for a virtual appointment*:
https://www.aci.health.nsw.gov.au/__data/assets/pdf_file/0003/573267/ACI_Attending-an-appointment-using-telehealth-patients-0224a.pdf

Australian Physiotherapy Association – *Telehealth Guidelines:*
https://australian.physio/sites/default/files/APATelehealthGuidelinesCOVID190420FA.pdf?fbclid=Iw AR2uV6M5IHJGS8f8ZVVXw6rRYOl2DgFHEl8G2bedXivTfTmJKkznj0Itsys

The University of Queensland - *Quick start to videoconferencing - Tips on optimising video and audio quality and how to set up your video conferencing space:*
https://coh.centre.uq.edu.au/files/1998/COH_UQ_HP_Quick%20start%20to%20VC_v1.pdf

The University of Queensland - *Communicating effectively online - Tips on how to make the video conference as close to an in-person encounter as possible:*
https://coh.centre.uq.edu.au/files/2004/COH_UQ_HP_Communicating%20online_v1.pdf

Appendix 2: 5 sit-to-stand (5STS) test protocol

The 5STS is reliable, valid and responsive in patients with COPD with an estimated minimum clinical important difference (MCID) of 1.7 seconds.

Seat position:
Use a straight-backed armless chair with a hard seat stabilised by placing it against a wall.
Floor to seat height should be 48cm.
Ask patient to come forward on the chair seat until the feet are flat on the floor and to fold their upper limbs across the chest.

Instructions:
Instruct patient to stand up all the way and sit down once **without** using the upper limbs.
For those unable to complete the initial manoeuvre or who require assistance, terminate the test.
If successful on the initial sit to stand, ask patient to stand up all the way and sit down landing firmly, as fast as possible, five times without using the arms. Instruct patient to start test on 'go'.

Timing:
Use a stopwatch and start on the command 'go' and stop at the end of the completed fifth stand.

End-point Data:
The time taken is recorded as the patient's score.

Stop the test in the event of any of the following:
Chest pain suspicious for angina
Evolving mental confusion or lack of coordination
Evolving light-headedness
Intolerable dyspnoea
Leg cramps or extreme leg muscle fatigue
Any other clinically warranted reason

Reference:
Jones SE, Kon SSC, Canavan JL, et al. The five-repetition sit-to-stand test as a functional outcome measure in COPD. *Thorax* 2013;68(11):1015-20.

Appendix 3: 1 minute sit-to-stand (1minSTS) test protocol

The 1 minute STS is reliable, valid and responsive in patients with COPD. An improvement of at least three repetitions is consistent with physical benefits after PR.

Seat position:
Use a straight-backed armless chair with a hard seat stabilised by placing it against a wall.
Floor to seat height should be 46cm.
Ask patient to come forward on the chair seat until the feet are flat on the floor and to place hands on hips.

Instructions:
The purpose of the test is to assess your exercise capacity and leg muscle strength. The movement required is to get up from this chair with the legs straight and sit back continuing the repetitions as many times as possible within one minute. I will give you the countdown '3, 2, 1, Go' as an indication to start and also, I will tell you when we are at the 15 remaining seconds. If required, you can have a rest and resume the test as soon as possible.

Timing:
Use a stopwatch and start on the command 'go' and 'stop' at the one minute mark. Only include complete sit to stand manoeuvres.

End-point data:
The number of completed sit to stands during the one minute period is recorded as the test outcome.

Stop the test in the event of any of the following:
Chest pain suspicious for angina
Evolving mental confusion or lack of coordination
Evolving light-headedness
Intolerable dyspnoea
Leg cramps or extreme leg muscle fatigue.
Any other clinically warranted reason

References:
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Appendix 4: Telehealth contact topics

Tips on how to approach the telehealth sessions:

- Allow for, and advise of, a longer duration for assessment due to additional telehealth-specific set up and administration, such as discussion regarding home exercise environment and suitable equipment, and initial set-up of videoconferencing and a virtual tour of the home.
- Allow approximately 20 to 30 minutes for follow-up telephone calls, depending on the health issues of the patient.
- Establish rapport and a collaborative approach.
- When discussing exercise or health issues, try to start with the patient's main priority.
- Use motivational interviewing techniques during PR telehealth discussions.
- Use a discussion and shared decision-making approach:
  - Share information and explain uncertainties.
  - Provide therapeutic presence (active listening, empathy).
  - Offer options and invite questions.
  - Advise and reassure as appropriate.

Organising the telehealth call:

1. Commencing the telehealth consultation

   a. Check the patient consents to the phone call and complete ID check.
      - Example questions:
        - *'Are you happy to proceed today?'*
        - *'Can you hear me clearly?'* (Ask patient to adjust volume as required)
        - *'Can I just confirm your name, D.O.B and address, just to confirm I'm speaking to the right person?'*

   b. Set up expectations.
      - Example questions:
        - *'Just to confirm we're up to week XX in your program so you have XX more weeks to go'*
        - *'It would be good to discuss how things have gone this week'*
        - *'What would you like to discuss today?'*

   c. Discuss your agenda for the call.
      - Example questions:
        - *'I'd like to review your symptoms, discuss how your exercises have gone this week and discuss your goals for next week'*

   d. Listen to what the patient has to report about their week.

   e. Reflect on the issues discussed in the previous week(s) if appropriate.

2. Check current symptoms

   a. Explain to the patient that you are going to ask a few questions about their current respiratory symptoms (Table 1). Remind the patient to look at resources (e.g. CAT, modified Borg 0-10 dyspnoea scale) if they have them to help answer questions.

   b. Importance of symptom monitoring and self-management of acute exacerbations and use of an Action Plan should be discussed at least once during telehealth PR.

Table 1. Symptoms to check during telehealth call

Symptom	How to measure
Current breathlessness	Modified Borg 0-10 dyspnoea scale
Cough	Sputum volume e.g. use description of amount such as teaspoon, tablespoon, sputum cup; compare previous score from CAT (Q2) Sputum colour e.g. N/A/clear/white/creamy/yellow/green/blood-stained Sputum consistency e.g. runny, sticky, stringy, or descriptors such as toothpaste, porridge Ease of expectoration e.g. clear independently, difficult to clear Discuss current airway clearance methods
Wheeze	None/occasional (1-5 per week)/frequent (daily)/continuous (always wheeze) Aggravating activities prior to onset Relieved with bronchodilator? Worse in morning?
Fatigue	Score from CAT (Q8) Difficulty completing normal ADLs Change in sleep pattern

Abbreviation: CAT, COPD Assessment Test.

c. If patient reports any change in symptoms or reports feeling unwell, complete COVID-19 screening questions:
- *'Have you or anyone in the home:*
  - *travelled overseas within the last 14 days*
  - *had contact with anyone diagnosed or suspected of COVID-19*
  - *tested positive for COVID-19?'*
- *'Do you or anyone in the home, have any of the following symptoms:'*
  - *fever*
  - *shortness of breath*
  - *cough*
  - *sore throat?*

3. Discuss exercise program

a. Ask patient to have exercise diary ready to refer to:
- Example questions:
  - *'How are you getting on with your exercises?'*
  - *'Can we discuss your exercise sessions from last week?'*
  - *'Can you tell me about how you felt when you exercised during the last week?'*
  - *'Can you tell me what usually happens when you exercise?'*

b. Discuss:
- Number of sessions completed in last week.
- Minutes of endurance training achieved in recent sessions.
- Dyspnoea/RPE score during endurance exercise.
- Upper limb endurance training achieved in recent sessions.
- Lower limb strength training achieved in recent sessions.
- Upper limb strength training achieved in recent sessions.
- Any issues? (e.g. pain, difficulty with exercise technique).
- Achieved goal → continue and progress exercises, if indicated.
- Not achieved goal → discuss why, learn from experience, relapse prevention strategies/enhancement of self-efficacy.

c. Encourage the patient to focus on endurance/aerobic exercise:
  - Example questions
    - *'Although endurance exercise like walking can be difficult to do at home, the more you do, the better your breathing will feel. Is there a way you can think of to do more walking for exercise at home at the moment?'*
  - If the patient is finding endurance exercise difficult, encourage the patient to start with short
  - intervals and build up slowly over weeks.
  - Re-enforce that some exercise is better than nothing.
  - Spend time discussing where they can walk safely if they don't have access to equipment, such as a treadmill or stationary cycle and problem solve on a case-by-case with patients, e.g. finding a walking track within the home or outside the home in garden or driveway, using steps or ramps etc.
  - Encourage at least 4 days per week home exercise program - example questions:
    - *'We know from research the more exercise you can do, the better you will feel'*
    - *'How many times a week do you think you can manage?'*
  - Encourage patient to have dedicated time to exercise - example questions:
    - *'What time works best for you to exercise?'*
    - *'Some people like to lay their exercise clothes out the night before to help motivate them to start their exercise first thing in the morning, would this help you?'*
  - Discuss any barriers to exercise last week - example questions:
    - *'What do you think you can do to break down those barriers for this week's exercise?'*
  - Discuss exercise resources - example questions:
    - *'Would you like me to send you some links to websites with some great videos to watch of people with lung disease exercising?'*

d. Discuss exercise goals for next week:
  - As the patient begins to do a little more exercise, they will gradually feel less short of breath.
  - Progress the exercises each week but only if the patient can manage the exercise without excessive fatigue and with no more than usual pain.
  - Example questions:
    - *'Each week we will set goals for your exercises, with the aim of increasing your fitness and strength as the program progresses. We'll agree on the goals – I'll ask you to write them in your diary and I will write them down as well, so that we both remember.'*
  - If the patient has not achieved last week's goal, think about lowering the goal this week and then progress next time.
  - If the patient is struggling with exercise, discuss why and identify barriers.
  - Reinforce that it is OK not to progress and that the aim is to achieve stability and regular exercise.
  - It is not necessary to progress every week.
  - Give positive reinforcement - examples:
    - *'You are doing more than you were doing before which is really positive'*
    - *'Build up each day as you feel able. It is OK to be a little short of breath and tired. Stop and rest if you need and then carry on.'*
    - *'It is normal to be breathless when you exercise. Moderate breathlessness (3-4/10) means you are working at the right level. You need to get breathless to be less breathless.'*

4. <u>Discuss education program</u>

  - Example questions:
    - *'Have you managed to watch or read the educational material from this week?'*
    - *'Do you have any questions about the educational material?'*
  - Discuss and answer questions about the resources previously provided.

5. Discuss any other issues

   - Ask if they have any health issues that they would like to discuss.
   - Example question:
     - *'Is there something else you would like to talk about today?'*

6. Ending the telehealth consultation

   - End the call with a summary statement of the discussion and the plan for the following week, and set up day and time for next telehealth contact.
   - Example questions:
     - *'Just to summarise, it sounds like you've done xxxxx with your exercise this week and you'd like to focus on xxxx next week. Is that correct?'*
     - *'OK great, so this week your goal is to XXXXX (repeat exercise goal) and to XXXX (repeat education goal)'*
     - *'Is there anything else you'd like to discuss before we finish?'*
     - *'OK, great, is it ok if I call you next week on XXXXX (*agree next phone call date and time)*'*
   - Wish the patient well, say goodbye or *'I'm going to sign off now'.*
   - Document the encounter in the patient's clinical record.

Appendix 5: Active Australia Questionnaire

Physical activity questionnaire: Active Australia

1.
a. In the last week, how many times have you walked continuously, for at least 10 minutes, for recreation, exercise or to get to or from places? _____ times
b. What do you estimate was the total time that you spent walking in this way in the last week? _____ hours _____ minutes

2.
a. In the last week, how many times did you do any vigorous physical activity which made you breathe harder or puff and pant? (e.g. jogging, cycling, aerobics, competitive tennis) _____ times
b. What do you estimate was the total time that you spent doing this vigorous physical activity in the last week? _____ hours _____ minutes

3.
a. In the last week, how many times did you do any other more moderate physical activities that you have not already mentioned? (e.g. gentle swimming, social tennis, golf) _____ times
b. What do you estimate was the total time that you spent doing these activities in the last week? _____ hours _____ minutes

Source: Armstrong T, Bauman A, Davies J. Physical activity patterns of Australian Adults. Canberra: Australian Institute of Health and Welfare, 2000.

The Active Australia questionnaire has been shown to have measurement properties similar to other physical activity questionnaires (Brown 2004, Timperio 2004), and has also been shown to be responsive to change in physical activity interventions (Marshall 2004).

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